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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/620,876

07/15/2003

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07/30/2008

EXAMINER

PERUNGAVOOR, SATHYANARAYA V

ART UNIT

PAPER NUMBER

2624

MAIL DATE

DELIVERY MODE

07/30/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/620,876	Applicant(s) AKIMOTO ET AL.	
	Examiner SATH V. PERUNGAVOOR	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant(s) Response to Official Action

- [1] The response filed on June 5, 2008 has been entered and made of record.

Response to Arguments/Amendments

- [2] Presented arguments have been fully considered, but are rendered moot in view of the new ground(s) of rejection necessitated by amendment(s) initiated by the applicant(s).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- [3] Claim 1 recites the limitation "the non-responsible wavelet filters" in item c. There is insufficient antecedent basis for this limitation in the claim.

- [4] Claim 2 recites the limitation "the non-separable wavelet filters" in item c. There is insufficient antecedent basis for this limitation in the claim.

- [5] Claim 2 recites the limitation "the three filters" in item d. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

[6] Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sahaⁱ et al. (“Saha”) in view of Tongⁱⁱ et al. (“Tong”).

Regarding claim 1, Saha discloses the following claim limitations:

A method for compressing still images that are stored in electronic media [fig. 1] comprising the step of: a. selecting (*i.e. input image*) the image to be compressed [fig. 1]; b. selecting the desired degree (*i.e. 16:1*) of compression [page III-30, col. 2, para. 4]; c. constructing wavelet filters (*i.e. filter selection for wavelet decomposition*), based on the desired degree of compression (*i.e. 16:1*) and physical characteristics (*i.e. log energy entropy*) of the image [page III-29, col. 2, para. 4; page III-30, col. 1, para. 3; page III-30, col. 2, para. 4], for decomposition of the image by non-separable wavelet transformation, the compression accruing as a result of constructing the non-responsible wavelet filters based on required degree of compressors while the claim process proceeds [These limitations merely recite the intended use of the filters and do not actually perform those steps. See MPEP 2111.04]; d. transforming the image into an array of frequency coefficients (*i.e. wavelet coefficients*) of the pixels by executing one level of decomposition (*i.e. wavelet transform*) for each filters [page III-29, col. 1, para. 2; fig. 1]; f. quantizing (*i.e. quantizer*) the values of the frequency coefficients (*i.e. wavelet coefficients*) [page III-29, col. 1, para. 2;

fig. 1]; and g. encoding the quantized values by entropy coding methods [*page III-29, col. 1, para. 2; fig. 1*]; whereby the image is restored in the YCbCr format through the use of a pre-designated reconstruction formula; and transformed into the RGB palette after reconstruction is complete [*This limitation appears to be the intended result of the method positively recited, hence not given patentable weight. See MPEP 2111.04. It is also noted that limitation recites a concept notoriously well-known to image compression, for example JPEG 2000, hence the Examiner further takes Official Notice.*].

Saha does not explicitly disclose the following claim limitations:

e. sorting said frequency coefficients in descending order;

g. encoding the quantized values by run length and arithmetic coding methods;

However, in the same field of endeavor Tong discloses the deficient claim limitations, as follows:

Sorting said frequency coefficients in descending order (*i.e. top layers have larger coefficients and lower layers having smaller coefficients*) [*figs. 3A, 3B and 4; col. 7, ll. 53-64*] and encoding the quantized values by run length (*i.e. 4*) and arithmetic coding (*i.e. 6*) methods [*Fig. 1; col. 11, ll. 55-65*].

It would have been obvious to one with ordinary skill in the art at the time of invention to modify the teachings of Saha with Tong in order sort frequency coefficients and encode by run length and arithmetic coding, the motivation being to achieve efficient compression [*col. 3, ll. 5-15*].

Regarding claim 2, all claimed limitations are set forth and rejected as per discussion for claim 1.

Conclusion

[7] Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

[8] Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Sath V. Perungavoor whose telephone number is (571) 272-7455. The examiner can normally be reached on Monday to Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Matthew C. Bella whose telephone number is (571) 272-7778, can be reached on Monday to Friday from 9:00am to 5:00pm. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dated: July 29, 2008

/Matthew C Bella/
Supervisory Patent Examiner,
Art Unit 2624

Sath V. Perungavoor
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ⁱ NPL document titled "Analysis-Based Adaptive Wavelet Filter Selection In Lossy Image Coding Schemes"

ⁱⁱ US 5,982,434